

WHAT IS CLAIMED IS:

1. A system, comprising:

a container including a sidewall and a bottom wall, a neck region on the sidewall adjacent to an opening opposite the bottom wall, the container including projections spaced around the neck region, each projection including a cam surface, a lock surface, a ramp, and a clamping surface; and

a closure including a closure plane and a circumferentially depending outer skirt extending from the closure plane, a tamper-evident arrangement frangibly connected to an edge of the outer skirt opposite the closure plane, pairs of lugs spaced around an inner sidewall formed by the outer skirt and the tamper-evident arrangement, a lock lug of each pair of lugs arranged on the tamper-evident arrangement and a sealing lug of each pair of lugs arranged on the outer skirt;

wherein each lock lug is adapted to engage the cam surface of a corresponding projection during application of the closure to the container, the lock lug adapted to engage the lock surface of the corresponding projection after application of the closure to the container; and

wherein each sealing lug is adapted to engage the ramp of the corresponding projection during application of the closure to the container, the sealing lug adapted to engage the clamping surface of the corresponding projection after application of the closure to the container.

2. The system of claim 1, wherein a number of pairs of lugs is equal to a number of projections.

3. The system of claim 1, wherein the closure and the container cooperate to provide a tamper-evident closure with the container after the application of the closure to the container, the lock lug configured to engage the lock surface to prevent removal of the closure until the tamper-evident arrangement detaches from the outer skirt.

4. The system of claim 3, wherein the sealing lug is configured to engage the clamping surface until after the tamper-evident arrangement detaches completely from the outer skirt.

5. The system of claim 3, wherein the tamper-evident arrangement is configured to detach from the outer skirt during a first turning operation of the closure relative to the container.

6. The system of claim 1, wherein the closure and the container cooperate to provide a delay-release mechanism configured to retain the closure in a sealing position relative to the container until after separation of the tamper-evident arrangement from the outer skirt.

7. The system of claim 6, wherein the delay-release mechanism includes the sealing lug and the clamping surface.

8. The system of claim 1, further comprising:  
a child-resistant lock surface adapted to engage the sealing lug in a sealed position; and  
an inner wall on the closure arranged radially inward of the outer skirt, the inner wall adapted to engage the neck region of the container, one of the neck region and the inner wall tapered to provide a force to bias the closure open with respect to the container.

9. The system of claim 8, wherein the child-resistant lock surface is adapted to prevent removal of the closure from the container until a further force opposing the force that biases the closure open is provided.

10. A method for sealing a closure on a container in a tamper-evident manner, the closure including a lock lug

arranged on a tamper-evident arrangement of the closure and a sealing lug arranged on an outer skirt of the closure, comprising:

(a) rotating the closure with respect to the container in a first direction so that the sealing lug engages a ramp of a corresponding projection arranged on a neck region of the container, the engagement of the sealing lug and the ramp causing the closure and the container to move in an axial direction toward each other;

(b) after the rotating step (a), rotating the closure with respect to the container in the first direction so that the lock lug engages a cam surface of the corresponding projection and so that the sealing lug engages a clamping surface of the corresponding projection, the engagement of the sealing lug and the clamping surface preventing movement of the closure and the container in the axial direction away from each other;

(c) after the rotating step (b), rotating the closure with respect to the container in the first direction so that the lock lug engages a lock surface of the corresponding projection, the engagement of the lock surface and the lock lug preventing rotation of the closure with respect to the container in a second direction opposite the first direction until the tamper-evident arrangement is frangibly detached from the outer skirt.

11. The method of claim 10, wherein the closure includes a plurality of the lock lugs and the sealing lugs spaced around an inner sidewall of the outer skirt of the closure and the tamper-evident arrangement.

12. The method of claim 10, wherein the container includes a sidewall and a bottom wall, the neck region arranged on the sidewall and adjacent to an opening, the opening opposite the bottom wall.

13. The method of claim 10, wherein the closure includes a closure plane and the outer skirt circumferentially extends from the closure plane, and the tamper-evident arrangement is frangibly connected to an edge of the outer skirt opposite the closure plane.

14. The method of claim 10, wherein the closure includes a number of pairs of the lock lugs and sealing lugs is equal to a number of projections provided on the container.

15. The method of claim 10, further comprising engaging the clamping surface by the sealing lug until after the tamper-evident arrangement detaches completely from the outer skirt.

16. The method of claim 10, further comprising cooperating by the closure and the container to provide a delay-release mechanism.

17. The method of claim 16, wherein the delay-release mechanism includes the sealing lug and the clamping surface.

18. The method of claim 10, further comprising:  
engaging the sealing lug in a sealed position by a child-resistant lock surface; and  
engaging the neck region of the container by an inner wall arranged on the closure radially inward of the outer skirt, one of the neck region and the inner wall tapered to provide a force to bias the closure in an axial direction away from the container.

19. The method of claim 18, further comprising preventing removal of the closure from the container by the child-resistant lock surface until a further force opposing the force biasing the closure open is provided.

20. A method for removing a closure from a container, the closure and container engaged in a tamper-evident manner, the closure including a lock lug and a sealing lug, the container including a projection corresponding to the lugs, comprising:

rotating the closure with respect to the container in a first direction so that the lock lug engages a lock surface of the projection;

detaching a tamper-evident arrangement from an outer skirt of the closure; and

maintaining a seal between the closure and the container by the sealing lug arranged on the outer skirt engaging a clamping surface of the corresponding projection until after the detaching step.

21. The method of claim 20, wherein the lugs are spaced around an inner sidewall of the outer skirt of the closure and the tamper-evident arrangement.